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the same as characterize the two parents, showing that, as in another instance mentioned in the writer's recent paper on rock ferns in this journal, the hybrid does not differ from the parents in soil preference.—EDGAR T. WHERRY, WASHINGTON, D. C.

Recent Fern Literature.

Glandular hairs are not infrequent on the outside of ferns, as of other plants, but it is probably news to most of us that they occur also inside. Dr. Theodor Holm has described and illustrated¹ such hairs which he found in the leaf-tissue of certain species of *Dryopteris*. If a cross-section of a leaf in these species be examined under the microscope, the tissue is found to be much more compact near the upper and lower surfaces. The cells there are closely contiguous; in the central part of the leaf, however, there are occasional air-spaces between them. In these spaces the glandular hairs are found. DeBary had long ago discovered such hairs in the ducts of the root-stock and the lower part of the petiole in *Dryopteris Filix-mas* and *D. spinulosa*, but they seem not to have been hitherto observed in the leaf. Dr. Holm found them in *D. Filix-mas*, *D. marginalis*, *D. spinulosa* and *D. cristata*, but not in *D. Thelypteris* nor *D. noveboracensis*, nor in representatives of seven other genera of our North American ferns which he examined. Nor are they known from any other plants whatsoever. Internal hairs have been noted in *Pilularia* and in four families of flowering plants, but in these cases they are not glandular.

Dr. Holm points out that the presence of these singular structures in certain species of the genus *Dryopteris*, as at present defined, and not in others, tends to confirm

¹ Holm, Theo. Internal glandular hairs in *Dryopteris*. *Rhodora* 22: 89-91, figs. 1 and 2. May, 1920.

Mr. Christensen's expressed belief that the species of the marsh fern group and those of the shield fern group really constitute separate genera.

Some time ago, in reviewing Dr. J. K. Small's "Ferns of tropical Florida," the present writer remarked that the chief regret of the fern lover who goes South would be that the author had not extended that work to cover the whole of the state. He has now done so to the extent of giving, in a brief article, a more or less complete list of the species known to occur within its boundaries and a general account of their habitats and distribution.²

In all about 90 species are mentioned, though Dr. Small states that more than one hundred have actually been found. Three, *Pycnodoria* (*Pteris*) *longifolia*, *Dryopteris* *setigera* and *Marsilea* *vestita*, are introduced; seven are found only in Florida. The remainder Dr. Small divides into two main groups, northern species whose range extends from Florida northward or westward along the Gulf of Mexico, and tropical species which reach Florida from the south. The former comprises about one third of all the species and most of those widely distributed within the state. The latter, though twice as numerous, are for the most part confined to two comparatively limited areas—the keys of the coast and the Everglades, treated in Dr. Small's earlier work, and the lime-sink region in the northwestern part of the peninsula, which has figured in the pages of the JOURNAL.³ The latter is an isolated area in which the occurrence of tropical ferns is not easy to explain.

²Small, John K. The land of ferns; the habitats and distribution of the fernworts of Florida. Journ. Elisha Mitchell Sci. Soc. 35: 92-104, pls. 24-28. 1920. Reprinted as no. 222 of the Contr. N. Y. Bot. Gard.

³See M. A. Noble, Fern Hunting in Florida in the phosphate country. Amer. Fern. Journ. 6: 42-44, 1916 and R. M. Harper, The Fern Grottoes of Citrus County, Florida, Amer. Fern. Journ. 6: 68-81, pl. 5, 1916.

Dr. Small's article is illustrated with five fine plates of a fern grotto and of various species in their natural surroundings.

American Fern Society

Dr. O. E. Jennings, Judge of Elections for this year, reports the results of the October balloting as follows. All the proposed amendments to the Constitution were adopted, the first three by 96 votes for to none against, the fourth by 95 for and one against. The vote for officers was: for President, William R. Maxon, 104; for Vice-President, Miss M. A. Marshall, 103, Mrs. Carlotta C. Hall, 1; for Secretary, Stewart H. Burnham, 104; for Treasurer, J. G. Underwood, 104. Eight members who voted for officers failed to vote, either pro or con, on the amendments.

The editors wish to make grateful acknowledgment of a generous gift of ten dollars from Mr. F. C. Greene for the general purposes of the JOURNAL and of smaller, but none the less welcome, gifts for illustrations from Miss Anne S. Angell, Miss Annie Lorenz, Miss Nellie Mirick and Dr. Herman Burgin.

The Society has recently received the gift of six volumes of the *Fern Bulletin* from Dr. Ruth Marshall; also six numbers of the *Bulletin* from Prof. S. Fred Prince and a copy of the rare number three of volume one of the JOURNAL. Mr. Carl Christensen has presented copies of four of his recent papers, *New Species of Hymenophyllaceae from Madagascar*, *Monograph of the Genus Dryopteris, Part II*, *The Pteridophyta of the Juan Fernandez Islands* and *The Ferns of Easter Island*. The last two were written in collaboration with Dr. Carl Skottsberg. All of the four are, or soon will be, available for lending to members.